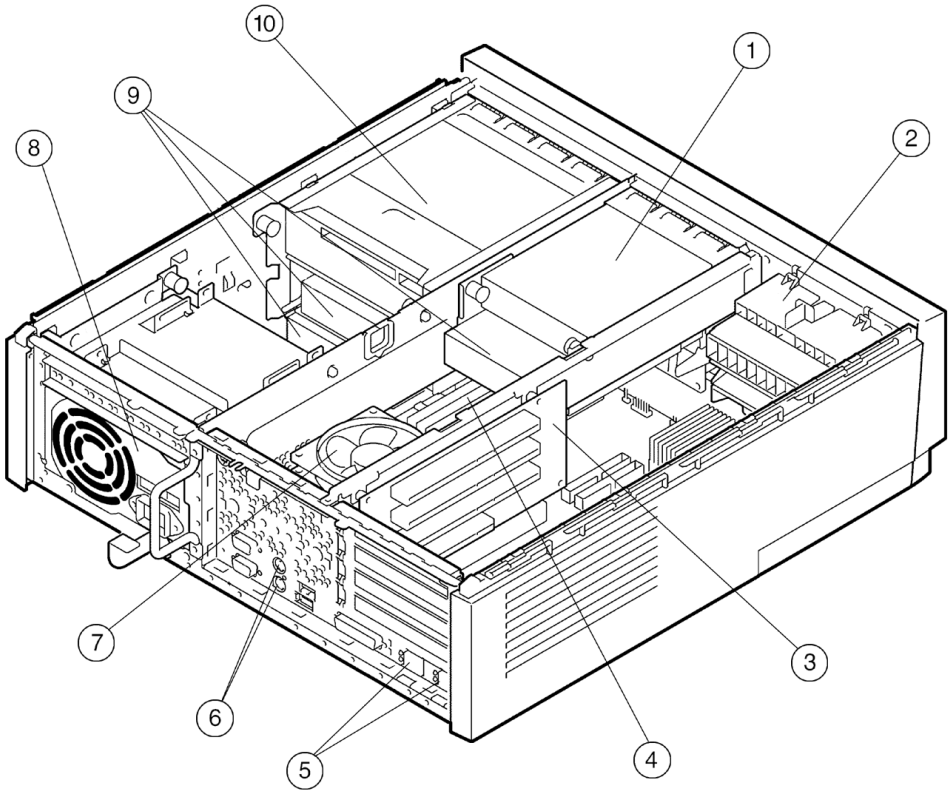
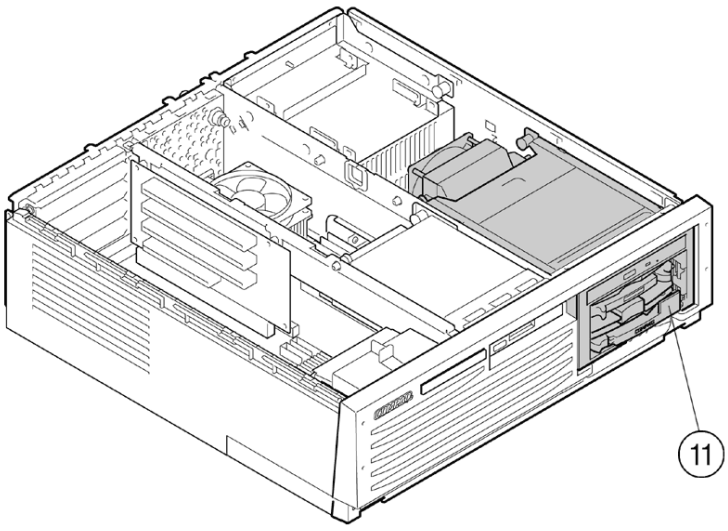
Overview





1. Diskette drive
2. Fan
3. PCI riser card
4. Memory boards
5. Dual Ethernet ports
6. Keyboard and mouse ports
7. CPU and fan
8. Power supply
9. Disks
10. CD-ROM drive
11. Front Access Storage Cage
12. Internal Storage Cage

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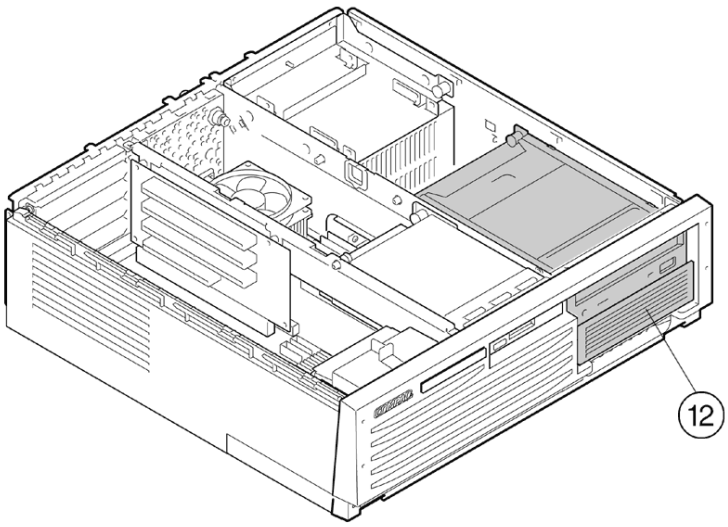
Overview



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At A Glance

AlphaServer/AlphaStation DS10 3U Systems include:

- Alpha 600-MHz CPU with 2-MB onboard ECC cache
- 512-MB or 1-GB SDRAM memory - expandable to 2-GB maximum memory capacity
- Onboard dual 10/100 BaseT Ethernet ports
- Four PCI expansion slots - three 64-bit PCI slots and one 32-bit PCI slot
- Onboard dual IDE controller
- 1.44-MB diskette drive
- 600-MB CD-ROM drive
- Two storage cage subsystems: Internal Storage Cage for IDE/SCSI tapes/drives; Front Access Storage Cage for SCSI drives
- DS10 Internal Storage Cage Systems can be configured with: three internal 3.5-inch x 1-inch hard disk drives or two internal 3.5-inch x 1-inch hard disk drives and one 5.25-inch x 1.6-inch removable media device
- DS10 Front Access Storage Cage Systems can be configured with: two front access 3.5-inch x 1-inch hard disk drives and two internal 3.5-inch x 1-inch hard disk drives) or one Front Access Universal tape drive (AIT or DAT) and two internal disk drives
- Maximum Internal storage capacity: Internal Storage Cage-108-GB SCSI or 120-GB IDE; Front Access Storage Cage-364-GB SCSI
- Two serial ports: COM1 port is both an RMC port with modem control and a full-duplex asynchronous communications port; COM2 port is a full-duplex asynchronous communications port
- Bi-directional enhanced parallel port
- PS/2-style keyboard port and mouse port
- 300W (120/240V, 60/50 Hz) power supply
- U.S. English documentation
- Tru64 UNIX or OpenVMS Factory Installed Software
- 90-day software product warranty
- Protected by HP Services, including three-year, on-site hardware with next business day response

Standard Features

Processor	Alpha 21264A 600-MHz processor	
Cache Memory	2-MB onboard cache	
Upgradability	Supports upgrades of memory and hard drives	
	Standard	One CPU
Memory	Standard	512 MB or 1 GB (one memory kit)
	Maximum	2 GB (two memory kits, kits include two industry-standard DIMMs with ECC support)
Network Controller	Onboard dual 10/100 BaseT Ethernet ports	
Expansion	Storage bays	Internal Storage Cage Systems: Five total – CD-ROM, FDD, and three storage bays: Three internal 3.5-inch x 1-inch hard disk drives **or** two internal 3.5-inch x 1-inch hard disk drives and one 5.25-inch x 1.6-inch removable media device
		Front Access Storage Cage Systems: Six Total – CD-ROM, FDD, and Four Storage bays (two front access 3.5-inch x 1-inch hard disk drives and two internal 3.5-inch x 1-inch hard disk drives)
	PCI slots	Four full-length slots (three 64-bit, one 32-bit)
Storage	Diskette Drive	1.44-MB diskette drive
	CD-ROM	Internal Storage Cage Systems: 5.25-inch half height 48X CD-ROM drive
		Front Access Storage Cage Systems 24X slim-line CD-ROM drive
	Hard Drives	20-GB and 40-GB IDE disk drives or 18.2-GB and 36.4-GB Wide Ultra3 available with the Internal Storage Cage, and 18.2-GB, 36.4-GB, 72.8-GB, or 146-GB Universal SCSI drives available with Front Access Storage Cage. SCSI disk drives require optional SCSI adapter. IDE drives not supported in Front Access Cage systems.
Storage Adapter/ Controller	Onboard IDE controller for internal storage, choice of optional storage adapters/controllers	
Expansion Ports	Parallel	One bi-directional enhanced port
	Serial	Two ports, one serial port with full-duplex asynchronous modem control and one RMS dedicated serial port with full-duplex asynchronous modem control
	Keyboard	One PS/2-style port
	Mouse	One port
Power Supply	300W (88-260V, 47-63 Hz)	
Manageability	Insight Manager	

Standard Features

Supported Options

A detailed summary of options supported on the AlphaServer/AlphaStation DS10 is available at http://www.compaq.com/alphaserver/options/asds10/asds10_options.html

NOTE: This website is available in English only.

OS Support

AlphaServer DS10 Tru64 UNIX systems include pre-installed software (V5.1B), Base license, Unlimited User license, Server Extension license, Internet Express and Secure Web Server.

AlphaStation DS10 Tru64 UNIX systems include pre-installed software (V5.1B), 2-user Base license

AlphaServer DS10 OpenVMS systems include pre-installed software (V7.3-1), Base license with System Manager license and Enterprise Integration Server License Package for OpenVMS V3.0A.

AlphaStation DS10 OpenVMS systems include pre-installed software (V7.3-1), Base license, Concurrent Use 1-user license, and NAS 150 Client license.

Minimum OS support: Tru64 UNIX V4.0F or OpenVMS V7.1 –2

Service and Support

Protected by HP Services, including a three-year, on-site hardware warranty with next business day response. Software warranty is a 90-day telephone advisory. Training, consulting, network integration, software support, comprehensive system maintenance and guaranteed uptime services are also available for customers requiring higher levels of service and support.

Step 1 – Select system

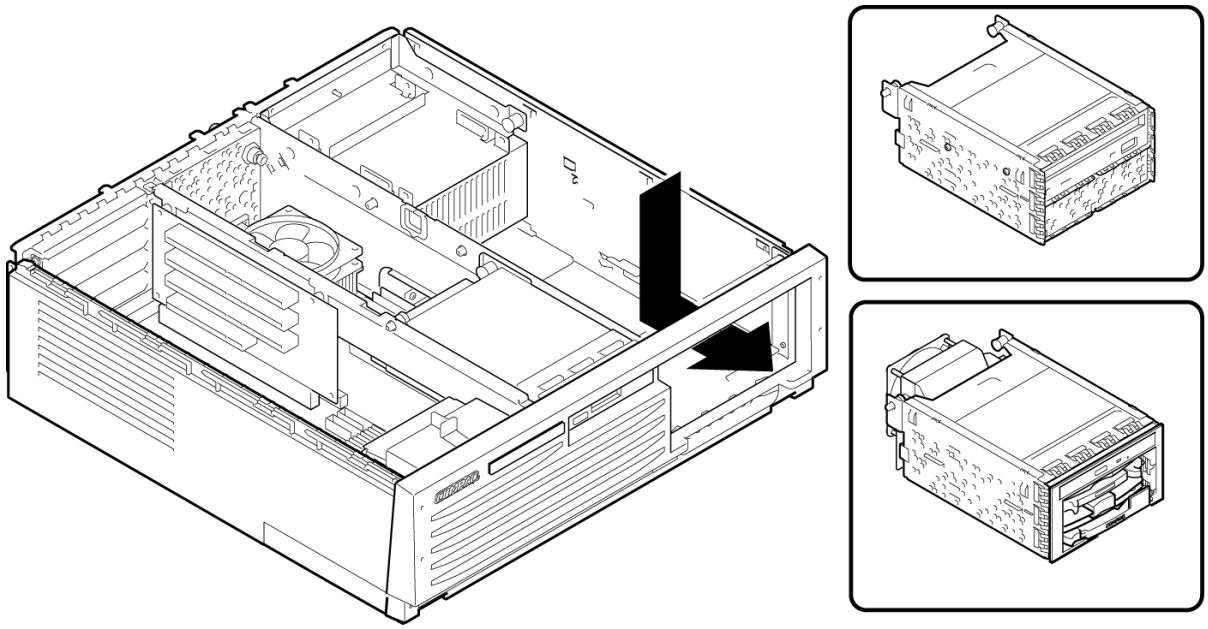
AlphaServer/AlphaStation DS10 600-MHz systems require the **mandatory** selection of the following items:

- **One Storage Cage** (either Internal Storage Cage or Front Access Storage Cage) **and one system disk**
- **If Internal Storage Cage is selected:**
- Mandatory selection of one IDE or one internal SCSI system disk drive
- Mandatory selection of SCSI adapter and SCSI cable kit required for internal SCSI disks and tape
- **If Front Access Storage Cage is selected:**
- Mandatory selection of one Universal SCSI system disk drive
- Mandatory selection of SCSI adapter is required for Front Access Storage Cage (cable is included)
- Front Access Storage Cage based system is SCSI only. (IDE drives cannot be used.)
- Country-specific power cord
- Software media and documentation for first system on site
- Rackmount kit for rackmount systems (See Step 5 – M-Series Cabinet Enclosures)
- Minimum OS support: Tru64 UNIX V4.0F or OpenVMS V7.1-2

NOTE: Country-specific keyboard and mouse are recommended. See Step 11.

AlphaServer DS10 600-MHz Base Systems							
OS	CPU	Memory	PCI	2-10/100t Ports	Hard Drive	Storage Cage	Order Number
Tru64 UNIX	600 MHz	512 MB	4	Onboard	Mandatory	Mandatory	DA-74BAA-EA
Tru64 UNIX	600 MHz	1 GB	4	Onboard	Mandatory	Mandatory	DA-74BAA-FA
OpenVMS	600 MHz	512 MB	4	Onboard	Mandatory	Mandatory	DY-74BAA-EA
OpenVMS	600 MHz	1 GB	4	Onboard	Mandatory	Mandatory	DY-74BAA-FA
Linux-Ready	600 MHz	512 MB	4	Onboard	Mandatory	Mandatory	DJ-74BAA-EA
Linux-Ready	600 MHz	1 GB	4	Onboard	Mandatory	Mandatory	DJ-74BAA-FA
AlphaStation DS10 600-MHz Base Systems							
OS	CPU	Memory	PCI	2-10/100t Ports	Hard Drive	Storage Cage	Order Number
Tru64 UNIX	600 MHz	512 MB	4	Onboard	Mandatory	Mandatory	DA-74BAA-EW
Tru64 UNIX	600 MHz	1 GB	4	Onboard	Mandatory	Mandatory	DA-74BAA-FW
OpenVMS	600 MHz	512 MB	4	Onboard	Mandatory	Mandatory	DY-74BAA-EW
OpenVMS	600 MHz	1 GB	4	Onboard	Mandatory	Mandatory	DY-74BAA-FW
Linux-Ready	600 MHz	512 MB	4	Onboard	Mandatory	Mandatory	DJ-74BAA-EW
Linux-Ready	600 MHz	1 GB	4	Onboard	Mandatory	Mandatory	DJ-74BAA-FW

Step 2 – Select Mandatory Options (Storage Cage, System Disk, SCSI Controller, Power Cord)



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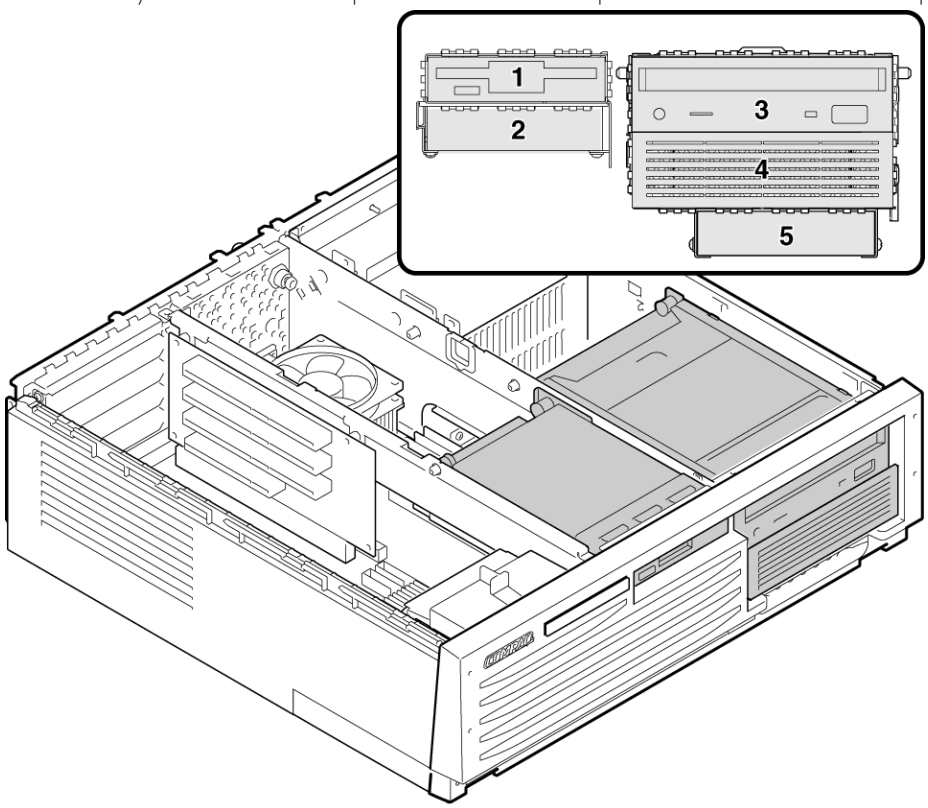
Step 2a – Mandatory Selection of Storage Cage

- DS10 Systems support **one** Storage Cage
- Selection of one Storage Cage is **mandatory (no exceptions)**
- DS10 Internal Storage Cage: DS10 System with Internal Cage supports three storage devices: 3X-BA10A-AA
  - Either three internal hard disk drives or one 5.25-inch half height backup tape and two internal hard disk drives
- DS10 Front Access Storage Cage: DS10 System with Front Access Cage supports up to four storage devices:
  - Two Universal disk drives plus two internal disk drives, or 3X-BA10B-AA
  - One Front Access Universal Tape Drive (AIT or DAT) and two internal disk drives

Step 2b – Internal Storage Cage - System Disk Drive - Mandatory

- Selection of one system disk drive is mandatory for the Internal Storage Cage (3X-BA10A-AA)
  - Mandatory selection of one IDE or one internal SCSI system disk drive
  - Mandatory selection of SCSI adapter and SCSI cable kit required for internal SCSI disks and tape



1. Floppy Disk Drive
2. Internal Drive Bay
3. CD ROM
4. Internal Drive/Tape Bay
5. Internal Drive Bay

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DS10 Storage Configuration Rules with Selection of Internal Storage Cage:

- DS10 Systems configured with the Internal Storage Cage include a 600-MB 48X half height CD-ROM and 1.44-MB diskette in dedicated drive slots
- DS10 Systems configured with the Internal Storage Cage include three internal storage bays (two in the Storage cage plus one in the system box) that can be configured as follows:
  - Maximum of three internal disk drives (3.5-inch x 1-inch drives) or two internal disk drives (3.5-inch x 1-inch) and one 5.25-inch half height removable media device
- Mandatory selection of SCSI adapter and SCSI cable kit is required for internal SCSI disks or tapes
- IDE Disk drive cable kits are included with the system

NOTE: When a tape drive is ordered it will be installed in the top slot (Slot 3) and the CD will be installed in Slot 4

Internal IDE Disk Drives	20 GB 7,200 rpm IDE (UDMA) drive	3X-RE58A-AA
	40-GB 7,200 rpm IDE (UDMA) drive	3X-RE58A-BA

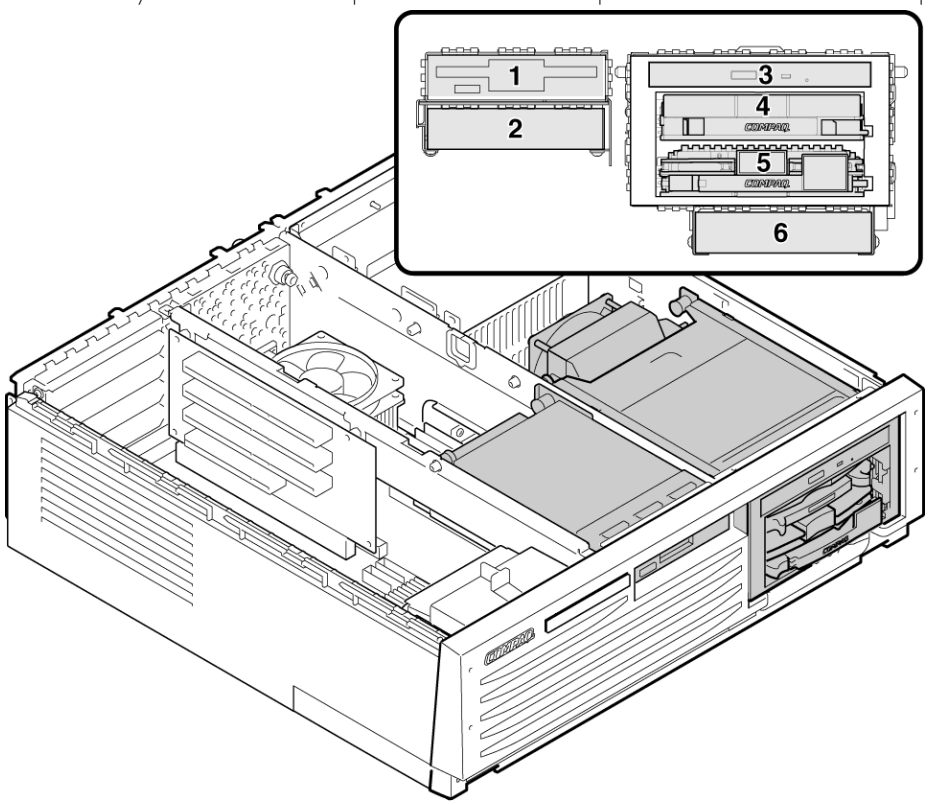
NOTE: Requires minimum console firmware V5.9-6 or higher. Updates available at http://ftp.digital.com/pub/Digital/Alpha/firmware/interim/ds10/v5.9-6/

NOTE: This website is available in English only.

Internal SCSI Disk Drives	36.4-GB Ultra3 SCSI 10,000 rpm drive	DS-RZ3FD-WA
Internal Tape Drives	DAT 12/24-GB 4-mm 5.25-inch half-height SCSI tape drive, top gun blue; requires single-ended UltraSCSI or Ultra2/Ultra3 adapter (3X-DEPVZ-AA, 3X-KZPCA-AA, 3X-KZPEA-DB, or KZPCM-DA) and SCSI cable (SCSI adapter, SN-PBXKP-BA required)	TLZ10-LB
	DAT 20/40-GB 4-mm 5.25-inch half-height Ultra2 (LVD) SCSI tape drive, top gun blue; requires Ultra2/Ultra3 (LVD) adapter (3X-KZPCA-AA, 3X-DEPVZ-AA, or 3X-KZPEA-DB) and SCSI cable (Tru64 UNIX and OpenVMS only)	3X-SD20X-LB
	AIT 5.25-inch half-height 35/70-GB 8-mm Wide UltraSCSI tape drive, top gun blue; requires single ended UltraSCSI adapter or Ultra2/Ultra3 adapter (3X-DEPVZ-AA, KZPCM-DA, 3X-KZPCA-AA, or 3X-KZPEA-DB) and SCSI cable (Tru64 UNIX and OpenVMS only)	3X-SZ35X-LB
	AIT 35/70-GB tape drive (LVD), carbon black; requires Ultra2/Ultra3 (LVD) adapter (3X-KZPCA-AA, 3X-DEPVZ-AA, or 3X-KZPEA-DB) and SCSI cable	3R-A2392-AA
	AIT 5.25-inch half-height 50/100-GB 8-mm Ultra2 (LVD) SCSI tape drive, top gun blue; requires Ultra2/Ultra3 (LVD) adapter (3X-KZPCA-AA, 3X-DEPVZ-AA or 3X-KZPEA-DB) and SCSI cable (Tru64 UNIX and OpenVMS only)	3X-SZ50X-LB
	AIT 5.25-inch half-height 100/200-GB 8-mm Ultra3 SCSI tape drive; requires Ultra2/Ultra3 (LVD) adapter (3X-DEPVZ-AA, 3X-KZPEA-DB, and 3X-KZPCA-AA) and SCSI cable, carbon black	3R-A3623-AA

Step 2c – Front Access Storage Cage - System Disk or Tape Drive - Mandatory

- Selection of one system disk drive is mandatory for the Internal Storage Cage (3X-BA10A-AA)
  - Mandatory selection of one IDE or one internal SCSI system disk drive
  - Mandatory selection of SCSI adapter and SCSI cable kit required for internal SCSI disks and tape



1. Floppy Disk Drive
2. Internal Drive Bay
3. CD ROM
4. Compaq Universal Drive Bay
5. Compaq Universal Drive Bay
6. Internal Drive Bay

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Front Access Storage Cage System Disk Drive Selection - Mandatory

- Selection of one Universal system disk drive or Universal tape drive is mandatory for each Front Access Storage Cage
- Mandatory selection of one Universal SCSI system disk drive or Universal tape drive
- Mandatory selection of SCSI adapter is required for Front Access Storage Cage
- SCSI cable with connections to the four disk drives is included with the Front Access Storage Cage

DS10 Storage Configuration Rules with Selection of Front Access Storage Cage:

- DS10 Systems configured with Front Access Storage Cage include a 600-MB 24X slim-line CD-ROM and 1.44-MB drive in dedicated drive slots
- DS10 Systems configured with the Front Access Storage Cage include four storage bays (two Universal SCSI disk drives and two internal SCSI drives) which can be configured as follows:
  - Maximum of two internal disk drives (3.5-inch x 1-inch drives) and two Universal disk drives (3.5-inch x 1-inch) or one Front Access Universal tape drive (AIT or DAT) and two internal disk drives.
- Mandatory selection of SCSI adapter for Front Access Cage Systems
- SCSI cable included with Front Access Cage

NOTE: IDE drives may not be used on Front Access Cage systems

Internal SCSI Disk Drives (For Drives Internal to System)	36.4-GB Ultra3 SCSI 10,000 rpm drive	DS-RZ3FD-WA

Universal Disk Drives (For Front Access Storage Cage)	18.2-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3848-AA
	36.4-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3838-AA
	36.4-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3849-AA
	72.8-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3839-AA
	72.8-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3851-AA
	146-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3841-AA

Universal Tape Drives (For Front Access Storage Cage)	AIT 35/70-GB LVD Universal tape drive, uses two slots	3R-A2396-AA
	AIT 50/100-GB LVD Universal tape drive, uses two slots	3R-A2779-AA
	AIT 100/200-GB LVD Universal tape drive, uses two slots (supported with 3X-DEPVZ-AA, 3X-KZPEA-DB, and 3X-KZPCA-AA adapters)	3R-A3621-AA
	DAT 20/40-GB DDS4 LVD Universal tape drive, uses two slots	3R-A2780-AA

Step 2d – Internal SCSI Adapters and Cable Kits

- Front Access Storage Cage:
  - Mandatory selection of SCSI adapter is required for Front Access Storage Cage
  - Front Access Storage Cage includes SCSI cable kit for connection to four disks
- Internal Storage Cage:
  - Mandatory selection of SCSI adapter and SCSI cable kit are required for Standard Storage Cage systems with SCSI disk or tapes

SCSI Adapters (For Internal and Front Access Drives)	PCI 1-channel Ultra2 SCSI adapter (LVD)	3X-KZPCA-AA
	PCI 2-channel multi-mode Ultra3 LVD SCSI adapter, VHDCI (Tru64 UNIX V5.1 or higher and OpenVMS V7.2-2 or higher) No shared bus support with OpenVMS. No shared tape/library support with OpenVMS or Tru64 UNIX. 3X-KZPEA-DB adapter supports shared bus using hard disk drives under Tru64 UNIX V5.1A with PK4 and NHD5 or V5.1B and TruCluster V5.1B with Initial Patch Kit installed; supports maximum of two nodes per shared bus; requires 3X-BN55A-01 Y-cable and connector plug assembly, and 3X-H32CT-AA external LVD terminator per shared bus.	3X-KZPEA-DB
	NOTE: Tru64 UNIX Initial Patch Kit for V5.1B located at: http://ftp1.support.compaq.com/public/unix/5.1b	
	NOTE: Patch kit required, kit available at: http://ftp1.support.compaq.com/public/Digital_UNIX/v5.1/	
	NOTE: This website is available in English only.	
	PCI combo card - PCI 2-channel UltraSCSI single-ended adapter and 10/100 Mbit	KZPCM-DA
	PCI combo card - 1-channel Ultra2 SCSI (LVD) Graphics, 10/100 Ethernet (Tru64 UNIX and OpenVMS only)	3X-DEPVZ-AA
	PCI 1-channel UltraSCSI RAID controller (Tru64 UNIX and OpenVMS only)	KZPAC-AA
	NOTE: Internal or Front Access Disk Drives connected to a KZPAC controller are not capable of implementing the fault management features of this controller, such as 'hot spare' and 'automatic rebuilds'- manual rebuilds are supported.	
	PCI 3-port UltraSCSI RAID controller (4-MB/8-MB cache) (Tru64 UNIX V4.0F,OpenVMS V7.2-1)	KZPAC-CA/CB
	NOTE: Internal or Front Access Disk Drives connected to a KZPAC controller are not capable of implementing the fault management features of this controller, such as 'hot spare' and 'automatic rebuilds' - manual rebuilds are supported.	
	PCI 1-channel Ultra2 SCSI RAID controller, 4-MB cache (Linux-Ready Systems only)	SN-KZPBC-AA
	PCI 3-channel Ultra2 SCSI RAID controller, 32-MB cache (Linux-Ready Systems only)	FR-PCTAR-IB
	PCI 3-channel Ultra2 SCSI RAID controller, 64-MB cache (Linux-Ready Systems only)	FR-PCTAR-IC
	DS10 SCSI cable kit (with connections for three internal drives)	3X-BN51A-SE
	NOTE: The DS10 SCSI cable kit is included with the Front Access Storage Cage. The DS10 SCSI cable kit is required for Internal Storage Cage systems with SCSI disks or tapes.	

Desktop Power Cords	North America, 2.5-meter	3X-BN46K-2E
	North America, 200 to 240V, 75-inch	BN18J-1K
	Australia, New Zealand, 2.5-meter (103541-011)	BN19H-2E
	Central Europe, 2.5-meter	BN19C-2E
	Denmark, 2.5-meter (103541-481)	BN19K-2E
	Egypt, India, South Africa, 2.5-meter (103541-AR1)	BN19S-2E
	Israel, 2.5-meter	BN18L-2E
	Italy, 2.5-meter	BN35M-02
	Japan, 2.5-meter, Dentori approved	3X-BN46G-02
	Switzerland, 2.5-meter (103541-511)	BN19E-2E
	UK, Ireland, 2.5-meter	BN19A-2E

Rackmount (M-Series Cabinet) **Power Cords**	U.S./Canada	BN20Z-4E
	Non-U.S.	3X-BN46L-4E
	Japan, 4.5-meter (right-angle connector)	3X-BN46D-4E

Options

Step 3 – Memory – Optional

- Maximum 2-GB memory
- Systems include one memory kit; maximum two memory kits per system - each kit includes two industry-standard DIMMs with ECC support

512-MB memory kit, two 200-pin, 100-MHz, 256-MB DIMMs	3X-MS310-DA
1-GB memory kit, two 200-pin, 100-MHz, 512-MB DIMMs	3X-MS310-EA

Step 4 – DVD-ROM Drive – Optional

16X DVD-ROM Drive – Supported in Internal Storage Cage only – **not** supported in Front Access Storage Cage – supported in slot 3 of the Internal Storage Cage and replaces standard CD-ROM (see diagram on page 6, Step 2b). Ships as spare, not integrated in manufacturing.	3X-PBXRV-BA

Step 5 – M-Series Cabinets – Optional

- M-Series cabinet enclosures support up to 12 DS10 systems (H9A15).
- M-Series enclosures require selection of the following items:
  - H9A10, or H9A15 Cabinet, 120V or 240V
  - Cabinet front door based on cabinet height
  - Factory integration

Cabinet Configuration Chart for AlphaServer DS10 Rackmount Systems

- A minimum of two AlphaServer DS10 systems is required in the H9A15 M-Series cabinet.
- Each system requires a DS10 M-Series Rackmount kit (3X-PBX01-AB).
- Each system requires a rack mount power cord.

NOTE: The number of ballast kits required is determined only by the number of system boxes. Ballast kits are required according to the following chart:
For more information on M-Series Cabinet Enclosures, see http://www.compaq.com/alphaserver/products/m-series/index.html
NOTE: This website is available in English only.

Options

Cabinet Configuration Chart for AlphaServer DS10 (3U) Rackmount Systems with Disk Shelves (12U)

M-Series Cabinet	System Rack Kit per DS10 system	M-Series Cabinet Height/Space	DS10 Systems	StorageWorks DS-SL13R Disk Shelf	Ballast Kits Required
H9A10-MC/MD	3X-PBX01-AB	67-inch/32U	1 or 2	6	2
			3 or 4	6	1
			5	6	1
			6	4	0
			7	2	0
			8, 9, or 10	0	0
H9A15-MC/MD	3X-PBX01-AB	79-inch/39U	2 or 3	6	2
			4	6	1
			5	6	1
			6	4	1
			7	2	0
			8 to 12	0	0

M-Series Rackmount Kit for AlphaServer DS10

- Rackmount kit must be ordered separately
- DS10 M-Series rackmount kit — 3X-PBX01-AB

NOTE: Factory integration of a DS10 system drawer in a 9000 Series Rackmount Cabinet using rack kit, 3X-PBX01-AA, is not supported. Contact Custom Systems.

M-Series Cabinets

67-inch cabinet enclosure with 59.5-inch or 34U of usable vertical space; 120V dual-24A controller, each with 10 NEMA 5-15R outlets, input power plug NEMA L5-30P, Americas, Asia Pacific; includes rear door, top fan tray, and two H7600-AA power distribution units — H9A10-MC

67-inch cabinet enclosure with 59.5-inch or 34U of usable vertical space; 240V dual-16A controller, each with 12 IEC C13 outlets, input power plug IEC 309, 16A, Europe; includes rear door, top fan tray, and two H7600-DB power distribution units — H9A10-MD

79-inch cabinet enclosure with 71.7-inch or 41U of usable vertical space; 120V dual-24A controller, each with 10 NEMA 5-15R outlets, input power plug NEMA L5-30P, Americas, Asia Pacific; includes rear door, top fan tray, and two H7600-AA power distribution units — H9A15-MC

79-inch cabinet enclosure with 71.7-inch or 41U of usable vertical space; 240V dual-16A controller, each with 12 IEC C13 outlets, input power plug IEC 309, 16A, Europe; includes rear door, top fan tray, and two H7600-DB power distribution units — H9A15-MD

M-Series Cabinet Rear Cabinet Extender

- Requires selection of one cabinet extender for each H9A10 or H9A15 cabinet

Rear cabinet extender, top gun blue, for H9A10-MC/MD cabinets — H9C10-TE

Rear cabinet extender, top gun blue, for H9A15-MC/MD cabinets — H9C15-TE

NOTE: Rear Cabinet Extender, H9C10-TE or H9C15-TE, is mandatory for second BA370.

M-Series Cabinet Front Door

- Requires selection of door based on cabinet height

Front door, top gun blue, for H9A10-MC/MD cabinet enclosure — H9C10-TF

Front door, top gun blue, for H9A15-MC/MD cabinet enclosure — H9C15-TF

Options

M-Series Cabinet Factory Integration

- Mandatory selection

Factory Integration of systems and storage devices assembled and configured in cabinet enclosure for H9A10 or H9A15 cabinet enclosures	YS-ASCAA-AA

M-Series Cabinet Ballast Kits

- Add ballast kits as required
- Ballast is added to a cabinet at particular locations for specific configurations to meet safety regulations for installation, operation, and service; see Cabinet Configuration Charts

Two 35 to 40 lb steel plates	H9C10-MC

M-Series Cabinet Rackmount Power Cords

U.S./Canada	BN20Z-4E
Non-U.S.	BN35S-4E
Japan, 2.5-meter	3X-BN46D-4E

CustomSystems Support

- Cabinets that contain systems and storage must be assembled by qualified assemblers: HP Manufacturing, CustomSystems, or an authorized HP Certified Integration Partner.
- For custom integration of systems, options, cabinet expansion offerings, and additional HP and third-party devices, or for other cabinets, doors, and trim kits of a different color, contact CustomSystems at 1-800-AT COMPAQ, or your local authorized HP Certified Integration Partner.

Step 6 – External Storage – Optional

- Tape drives require an LVD adapter (3X-KZPCA-AA or 3X-KZPEA-DB) or single-ended UltraSCSI adapter (KZPCM-DA) and country-specific power cord.
  NOTE: 3X-KZPEA-DB does not support shared tape/libraries.

Tape Devices

AIT Tabletop Tape Drives

AIT 35/70-GB 8-mm LVD tabletop tape drive, North America, carbon black; requires LVD adapter	216885-001
Same as above, International	216885-B31
Same as above, Japan	216885-291
AIT 50/100-GB 8-mm SCSI tabletop tape drive with 120V North America power cord, carbon black; requires Ultra2 (LVD) adapter	157767-002
Same as above, International	157767-B32
Same as above, Japan	157767-292
AIT 100/200-GB 8-mm SCSI tabletop tape drive with 120V North America power cord	249160-001
Same as above, International	249160-B31

AIT Hot-plug Tape Drives

- AIT hot-plug tape drives require two Universal slots

AIT 35/70-GB hot-plug LVD Universal tape drive, uses two slots in 43xxx shelves	3R-A2396-AA
AIT 50/100-GB hot-plug LVD Universal tape drive, uses two slots in 43xxx shelves	3R-A2779-AA
AIT 100/200-GB LVD Universal tape drive, uses two slots in 43xxx shelves (supported with 3X-DEPVZ-AA, 3X-KZPEA-DB and 3X-KZPCA-AA adapters)	3R-A3621-AA

Options

AIT Autoloaders	AIT 35-GB tabletop autoloader, 8 cartridge, U.S.	292355-001
	Same as above, International	292355-B31
	AIT 35-GB rackmount autoloader, 8 cartridge, U.S.	280349-001
	Same as above, International	280349-B31
	AIT Rail kit for rackmount autoloader	284930-001
AIT Tape Libraries	SSL2020 AIT tabletop library with one AIT 50-GB drive and 20 slots, LVD	175195-B21
	SSL2020 AIT tabletop library with two AIT 50-GB drives and 20 slots, LVD	175195-B22
	SSL2020 AIT rackmount library with one AIT 50-GB drive and 20 slots, LVD	175196-B21
	SSL2020 AIT rackmount library with two AIT 50-GB drives and 20 slots, LVD	175196-B22
DAT Tabletop Tape Drives	DAT 20/40-GB 4-mm Wide Ultra2 (LVD) tabletop SCSI tape drive with 120V North America power cord, carbon black; requires Ultra2 (LVD) adapter	157770-002
	Same as above, International	157770-B32
	Same as above, Japan	157770-292
DAT Hot-Plug Tape Drive	DAT 20/40-GB DDS4 hot-plug LVD Universal tape drive, uses two slots in 43xxx shelves	3R-A2780-AA
DAT Autoloaders	DAT 20/40-GB auto loader external; requires BN31W-xx SCSI cable and 3X-KZPCA-AA, or 3X-DEPVZ-AA adapter, North America	166505-001
	Same as above, International	166505-B31
	Same as above, Japan	166505-291
DLT/SDLT Tabletop Tape Drives	DLT8000 tabletop 40/80-GB DLT external tape drive, carbon black - requires 3X-KZPCA-AA LVD adapter - U.S.	146197-B23
	Same as above – Japan	146197-292
	SDLT tabletop 110/220-GB external tape drive, carbon black- requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter - U.S.	192103-002
	Same as above – International	192103-B32
	Same as above – Japan	192103-292
	SDLT tabletop 160/320-GB external tape drive, carbon black - requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter - U.S.	257319-001
	Same as above - International	257319-B31
	Same as above - Japan	257319-291
Ultrium Tabletop Tape Drives	Ultrium 460 tabletop tape drive, four per system, two per SCSI bus, U.S. Supported with 3X-KZPEA-xx, KZPCA-xx, and DEPVZ SCSI adapters only. Ultrium 460 tape drives are cluster friendly devices, but cannot be shared by cluster members. Tru64 UNIX V5.1A requires Patch Kit 4: T64V51AB21AS0004-20030206.tar Tru64 UNIX V5.1B requires Patch Kit 1: T64v51bb03as0001-20021229.tar	Q1519A
	Ultrium 460 tabletop tape drive, same as above, International	Q1520A

Options

DLT/SDLT Tape Libraries	Rackmount kit for H9Axx M-Series cabinets – required for mounting MSL5000 series in M-Series cabinets	254795-001
	MSL5026DLX, DLT tabletop library with 1 40/80-GB DLT tape drive, LVD	231821-B21
	MSL5026DLX, DLT tabletop library with 2 40/80-GB DLT tape drives, LVD	231821-B22
	MSL5026DLX or MSL5026SL, DLT/SDLT rackmount library, 0 drives – requires rackmount kit (254795-001)	231979-B21
	MSL5026DLX, DLT rackmount library with 1 40/80-GB DLT tape drive, LVD – requires rackmount kit (254795-001)	231891-B21
	MSL5026DLX, DLT rackmount library with 2 40/80-GB DLT tape drives, LVD – requires rackmount kit (254795-001)	231891-B22
	MSL5026S2, SDLT2 tabletop library with one 160/320-GB SDLT tape drive, LVD	293473-B21
	MSL5026S2, SDLT2 tabletop library with two 160/320-GB SDLT tape drives, LVD	293473-B22
	MSL5026S2 SDLT rackmount library, 0 drives, LVD – requires rackmount kit (254795-001)	293472-B21
	MSL5026S2, SDLT2 rackmount library with one 160/320-GB SDLT tape drive, LVD	293472-B22
	MSL5026S2, SDLT2 rackmount library with two 160/320-GB SDLT tape drive, LVD	293472-B23
	MSL5026S2, SDLT2 rackmount library with one 160/320-GB SDLT tape drive with Fibre Channel, LVD	293472-B24
	MSL5026S2, SDLT2 rackmount library with two 160/320-GB SDLT tape drive with Fibre Channel, LVD	293472-B25
	MSL5026SL, SDLT tabletop library with one 110/220-GB SDLT tape drive, LVD	302511-B21
	MSL5026SL, SDLT tabletop library with two 110/220-GB SDLT tape drives, LVD	302511-B22
	MSL5026SL, SDLT rackmount library with one 110/220-GB SDLT tape drive, LVD	302512-B21
	MSL5026SL, SDLT rackmount library with two 110/220-GB SDLT tape drives, LVD	302512-B22
	MSL5052, 0 drives, LVD, rackmount	255102-B21
	MSL5052SL SDLT tabletop library with 2 110/220-GB drives, LVD	249490-B21
	MSL5052SL SDLT rackmount library with 2 110/220-GB drives, LVD – requires rackmount kit (254795-001)	249491-B21
	MSL5052SL SDLT 110/220-GB drive field upgrade, LVD	231823-B22
	MSL5052S2, SDLT2 tabletop library with two 160/320-GB SDLT tape drives, LVD, graphite	293476-B21
	MSL5052S2, SDLT2 rackmount library with two 160/320-GB SDLT tape drive, LVD	293474-B21
	MSL5052S2, SDLT2 rackmount library with two 160/320-GB SDLT tape drive with Fibre Channel, LVD	293474-B24
	ESL9326SL SDLT tape library with six 110/220-GB SDLT tape drives, LVD	234615-B21
	ESL9326SL SDLT tape library with eight 110/220-GB SDLT tape drives, LVD	234615-B22
	ESL9326SL SDLT tape library with 16 110/220-GB SDLT tape drives, LVD	234615-B26

Options

3U Rackmount Tape Drive Enclosure	3U LVD Rackmount Tape Drive Enclosure for use in H9Axx M-Series Cabinets, 0 drives, carbon black	274338-B21
	Rackmount Kit for H9Axx Series Cabinets, carbon black – required for mounting 3U Rackmount Tape Drive Enclosure in M-Series cabinet	3R-A3804-AA
	NOTE: The 3U Tape Drive Enclosure supports up to four internal half-height removable devices, or up to two full height devices. Select up to four AIT or DAT devices, or two DLT/SDLT devices with 3U Rackmount Tape Drive Enclosure (274338-B21), or select preconfigured configurations listed below	
	AIT 35/70-GB 3U tape drive, requires 3X-KZPCA-AA LVD adapter, carbon black	216884-B21
	AIT 50/100-GB 3U tape drive, requires 3X-KZPCA-AA LVD adapter, carbon black (157766-B22)	3R-A3753-AA
	DAT 20/40-GB 3U tape drive, requires 3X-KZPCA-AA LVD adapter, carbon black (157769-B22)	3R-A3752-AA
	DLT8000 40/80-GB tape drive, requires 3X-KZPCA-AA LVD adapter	146196-B22
	SDLT 110/220-GB tape drive, requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter	192106-B25
	SDLT 160/320-GB tape drive, requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter, carbon black	257319-B21
	Ultrium 460 tape drive, requires 3X-KZPEA-xx, KZPCA-xx, or DEPVZ SCSI adapter, carbon black; Tru64 UNIX V5.1A requires Patch Kit 4: T64V51AB21AS0004-20030206.tar; Tru64 UNIX V.1B requires Patch Kit 1: T64v51bb03as0001-20021229.tar; OpenVMS support: minimum V7.2-2	Q1518A
	Preconfigured Configurations	
	AIT 50-GB 3U rackmount kit, carbon black	274333-B21
	DLT 40/80-GB, 3U rackmount kit, carbon black	274332-B21
	DLT 40/80-GB, dual-drive, 3U rackmount kit, carbon black	274335-B21
	SDLT 110/220-GB, 3U rackmount kit, carbon black	274331-B21
	SDLT 110/220-GB, dual-drive, 3U rackmount kit, carbon black	274334-B21
5U Rackmount Tape Drive Enclosure	5U LVD Rackmount Tape Drive Enclosure, carbon black, for use in H9Axx M-Series Cabinets, 0 drives	274339-B21
	Rackmount Kit for H9Axx Series Cabinets, carbon black - required for mounting 5U Rackmount Tape Drive Enclosure in M-Series cabinet	254795-001
	NOTE: The 5U Rackmount Tape Drive Enclosure supports four full-height devices; select up to four DLT or SDLT devices with 274339-B21, or select preconfigured configurations listed below.	
	DLT8000 40/80-GB tape drive, requires 3X-KZPCA-AA LVD adapter, carbon black	146196-B22
	SDLT 110/220-GB tape drive, requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter, carbon black	192106-B25
	SDLT 160/320-GB tape drive, requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter, carbon black	257319-B21
	Preconfigured configurations	
	SDLT 110/220-GB Tape Array III, 5U rackmount kit, carbon black	274336-B21
	DLT 40/80-GB Tape Array III, 5U rackmount kit, carbon black	274337-B21
	DLT Tape Array III Model 0 enclosure, U.S.	168047-001
	Same as above, International	168047-B31
	Same as above, Japan	168047-291

Options

Network Storage Routers

NOTE: The following Network Storage Routers are supported with MSL5000 and ELS9000 tape libraries:

NSR e1200 One Fibre Channel x 2 LVD FC to SCSI Data Router, Tru64 UNIX and OpenVMS, carbon black (262672-B21)	3R-A3746-AA
NSR e2400 Two Fibre Channel x 4 LVD FC to SCSI Data Router with card cage, Tru64 UNIX and OpenVMS, carbon black (262665-B21)	3R-A3935-AA
NSR e2400 Two Fibre Channel x 4 LVD FC to SCSI Data Router with no card cage, Tru64 UNIX and OpenVMS, carbon black (262664-B21)	3R-A3745-AA
NSR N1200 One Fibre Channel x 2 LVD FC to SCSI Data Router, Tru64 UNIX and OpenVMS, supports tape drives and tape libraries (280823-B21)	3R-A3747-AA
NSR m2402 Two Fibre Channel x 4 LVD FC to SCSI Data Router, Tru64 UNIX and OpenVMS 262653-B21)	3R-A3740-AA
NSR m2402 Two Fibre Channel x 4 HVD FC to SCSI Data Router, Tru64 UNIX and OpenVMS (262654-B21)	3R-A3741-AA

Storage Controllers/Host Bus Adapters for StorageWorks Pedestals and Shelves

- Storage controllers require a minimum operating system revision of Tru64 UNIX V4.0F or OpenVMS V7.1-2 unless noted otherwise.
- Each storage controller/adapter uses one PCI slot

Options

	Maximum # Supported			
	Tru64 UNIX	OpenVMS	Linux	
PCI-to-Fibre Channel host bus adapter (168794-B21)	2	2	-	DS-KGPSA-CA
PCI to 2–Gb Fibre Channel adapter, 64-bit/33 MHz, single-channel (261329-B21)	2	2	-	DS-KGPSA-DA
Fibre Channel cable BNGBX-xx=02, 05, 15, 30, 50 meters (234457-B2x) 234457-B2x=1 (02m), 2 (05m), 3 (15m), 4 (30m), 5 (50m)				BNGBX-xx
PCI-to-Fibre Channel 64-bit adapter, HBA	-	-	2	DS-SWLA4-PD
PCI 2-port UltraSCSI single-ended adapter and 10/100 Mb Ethernet combo adapter	2	2	-	KZPCM-DA
VHDCI male-to-VHDCI male UltraSCSI cable, xx=02, 2E(2.5), 03, 05, 10, 20 meters)				BN37A-xx
PCI 1-port Ultra2 SCSI (LVD) single-ended adapter, 68-pin HD connector, requires BN38C cable (2 to 20 meters) to connect to single-ended UltraSCSI shelf	2	2	3	3X-KZPCA-AA
68-pin HD male-to-VHDCI male UltraSCSI cable; required for each external UltraSCSI shelf attached to KZPCA-AA adapter				BN38C-xx
PCI 2-channel LVD multi-mode Ultra3 SCSI adapter, VHDCI (only supported in dual-bus shelves) Requires use of Ultra160 SCSI cables. NOTES: Patch kit required, kit is available at: http://ftp1.support.compaq.com/public/Digital_UNIX/v5.1/ No shared bus support with OpenVMS. No shared tape/library support with OpenVMS or Tru64 UNIX. 3X-KZPEA-DB adapter supports shared bus using hard disk drives under Tru64 UNIX V5.1A with PK4 and NHD5 or V5.1B and TruCluster V5.1B with Initial Patch Kit installed; supports maximum of two nodes per shared bus; requires 3X-BN55A-01 Y-cable and connector plug assembly, and 3X-H32CT-AA external LVD terminator per shared bus. Tru64 UNIX Initial Patch Kit for V5.1B located at: http://ftp1.support.compaq.com/public/unix/5.1b	1 (V5.1 or higher)	1	-	3X-KZPEA-DB

Options

Ultra160 SCSI cables xx=02 for 6 feet, 03 for 12 feet, 04 for 24 feet				3X-BC56J-xx
PCI 1-port UltraSCSI differential adapter; includes external 68-pin HD connector; requires BN38C-xx cable (2-25 meters) to connect adapter to Differential UltraSCSI shelf or RAID controller NOTE: Internal Connection is not supported.	2	2	2	3X-KZPBA-CC
68-pin HD male-to-VHDCI male UltraSCSI cable; required for each external UltraSCSI shelf attached to KZPBA-CB adapter				BN38C-xx
PCI 3-channel Ultra2 LVD RAID controller, 64-bit, 64-MB cache NOTES: ● Supported with BA610-6D, BA356 DS-SL13R-xx, or DS-SSL14-Rx shelves only. ● BA610-6D Nile Card must be at Rev 0B to support internal RAID. ● When installed in BA356 shelves, part number DS-BA35X-FC is required for non-factory installations. ● Graphics card is required to run the DS-KZPCC-CE console utilities (SMOR) with SRM console versions lower than V6.0 or, alternatively can be run via serial line and terminal emulation software for SRM V6.0 or higher. PB2GA-JC/JD graphics cards are not supported. ● EV6 systems not supported. ● Tru64 UNIX V4.0F requires NHD3 and Patch Kit 4 (BL15) or later. ● · Tru64 UNIX V5.1 requires Patch Kit 3 (BL17) and Early Release Patch C462. - Patch Kit 3 (BL17) is located at: T64V5117-C0046202-11060-Manual-ER-20010615.tar - Patch C462.02 is located at: http://ftp1.support.compaq.com/public/unix/v5.1/ ● · TruCluster V5.1 (restricted to non-shared buses only)	2 (V4.0F/ 4.0G/ 5.1/V5.1A)	-	-	DS-KZPCC-CE
PCI 1-channel Ultra2 LVD backplane RAID controller, 64-bit, 16-MB cache NOTES: ● Supported with BA610-6D, BA356, and DS-SL13R-xx shelves only. ● BA610-6D Nile Card must be at rev 0B to support internal RAID. ● When installed in BA356 shelves, part number DS-BA35X-FC is required for non-factory installations. ● Graphics card is required to run the DS-KZPCC-AC console utilities (SMOR) with SRM console versions lower than V6.0 or, alternatively can be run via serial line and terminal emulation software for SRM V6.0 or higher. PB2GA-JC/JD graphics cards are not supported. ● EV6 systems not supported. Tru64 UNIX V4.0F requires NHD3 and Patch Kit 4 (BL15) or later. ● · Tru64 UNIX V5.1 requires Patch Kit 3 (BL17) and Early Release Patch C462. - Patch Kit 3 (BL17) is located at: T64V5117-C0046202-11060-Manual- ER-20010615.tar - Patch C462.02 is located at: http://ftp1.support.compaq.com/public/unix/v5.1/ ● TruCluster V5.1 (restricted to non-shared buses only)	2 (V4.0F/ 4.0G/5.1/ V5.1A)	-	-	DS-KZPCC-AC

Options

PCI 2-port PCI to Ultra3, 64-bit, 66-MHz, LVD backplane RAID controller with 128-MB cache (uses one PCI slot); requires connection to DS-SL13R-xx shelves. Requires use of Ultra160 SCSI cables. NOTE: • Host-based volume shadowing or shared bus support not supported under OpenVMS. • Tru64 UNIX support: TruCluster support is restricted to non-shared buses only. Requires V5.1B with Initial Patch Kit located at: http://ftp1.support.compaq.com/public/unix/51b. • Tru64 UNIX V5.1A support requires patch kit located at: http://ftp1.support.compaq.com/public/unix/V5.1a	1	1	-	3X-KZPDC-BE
PCI 4-port PCI to Ultra3, 64-bit, 66-MHz, LVD backplane RAID controller with 256-MB cache (uses one PCI slot); requires connection to DS-SL13R-xx shelves. Requires use of Ultra160 SCSI cables. NOTE: • Host-based volume shadowing or shared bus support not supported under OpenVMS. • Tru64 UNIX support: TruCluster support is restricted to non-shared buses only. Requires V5.1B with Initial Patch Kit located at: http://ftp1.support.compaq.com/public/unix/51b. • Tru64 UNIX V5.1A support requires patch kit located at: http://ftp1.support.compaq.com/public/unix/V5.1a	1	1	-	3X-KZPDC-DF
Ultra160 SCSI cables, xx=02 for 6 feet, 03 for 12 feet, 04 for 24 feet				3X-BC56J-xx
PCI 1-port UltraSCSI RAID controller with 4-MB cache memory, includes RAID Array 230/Plus Subsystem software and documentation kit and VHDCI female connector; tape drives not supported - 18.2-GB or higher disk drives not supported on KZPAC-xx RAID controllers	2	2	-	KZPAC-AA
PCI 3-port UltraSCSI RAID controller with 4-MB cache memory, includes RAID Array 230/Plus Subsystem Software and documentation kit; tape drives not supported; SCSI cable required for each active port; requires BN31K-0E for external third-port connection - 18.2-GB or higher disk drives not supported on KZPAC-xx RAID controllers	2	2	-	KZPAC-CA
PCI 3-port UltraSCSI RAID controller with 8-MB cache memory, includes RAID Array 230/Plus Subsystem Software and documentation kit; tape drives not supported; SCSI cable required for each active port; requires BN31K-0E for external third-port connection - 18.2-GB or higher disk drives not supported on KZPAC-xx RAID controllers	2	2	-	KZPAC-CB
Cache battery backup for KZPAC controller				KZPSC-UB
VHDCI male-to-VHDCI male UltraSCSI cable, xx=02, 2E(2.5), 03, 05, 10, 20 m) NOTE: Manufacturing may substitute BN37A-02 cable for specific cabinet configurations				BN37A-xx
SCSI cable/bulkhead assembly kit with KZPAC-CA/CB, allows external connection of one third port				BN31K-0E
SCSI cable/bulkhead assembly kit, supports two third-port connections from KZPAC-CA/CB, allows external connection of two third ports				KZPAC-SB
PCI 1-channel Ultra2 SCSI RAID controller, 4-MB cache (Linux-Ready systems only)	-	-	3	SN-KZPBC-AA
PCI 3-channel Ultra2 SCSI RAID controller, 32-MB cache (Linux-Ready systems only)	-	-	3	FR-PCTAR-IB

Options

HVD to LVD Converters				
HVD (High Voltage Differential) adapters and LVD (Low Voltage Differential) devices are normally incompatible due to their different signaling voltage levels. This incompatibility does not allow direct communication between the different technologies. The HVD to LVD converter allows connectivity between legacy HVD Host Bust Adapters and today's LVD devices. The converter provides: • Connectivity in direct attach or shared configurations of all currently available LVD devices, including disks, tapes, libraries and shelves (4314 or 4354) when used with the KZPBA-CB and 3X-KZPBA-CC HVD adapters. With the retirement of StorageWorks 1 disks and HVD shelves (BA36R), converters are desirable where upgrades to LVD HBAs or upgrades to current operating system versions are not possible.				
Shared and direct attach configurations are interconnected much the same as those previously configured with homogeneous HVD solutions, except that the HVD output is now passed through the converter before proceeding to the LVD device				
HVD to LVD one-port rackmount converter (see QuickSpecs for configuration details)				3X-DWZCV-BA
HVD to LVD two-port rackmount converter (see QuickSpecs for configuration details)				3X-DWZCV-CA

Options

External Storage Solutions/Controllers 5000 (eva5000 Models)	Enterprise Virtual Array Model, eva5000 2C6D-B 60-Hz, includes 41U graphite storage cabinet, M3220 controller assembly with dual HSV110 controllers, six M5214 dual-redundant FC loop 14-bay drive enclosures, four 12-port FC loop switches; requires DS-KGPSA-xx (283198-B21)	DS-SV110-JA
	Enterprise Virtual Array Model, eva5000 2C6D-B 50-Hz, includes 41U graphite storage cabinet, M3220 controller assembly with dual HSV110 controllers, six M5214 dual-redundant FC loop 14-bay drive enclosures, four 12-port FC loop switches; requires DS-KGPSA-xx (283198-B22)	DS-SV110-JB
	Enterprise Virtual Array Model, eva5000 2C12D-B 60-Hz, includes 41U graphite storage cabinet, M3220 controller assembly with dual HSV110 controllers, twelve M5214 dual-redundant FC loop 14-bay drive enclosures, four 12-port FC loop switches; requires DS-KGPSA-xx (283199-B21)	DS-SV110-KA
	Enterprise Virtual Array Model, eva5000 2C12D-B 50-Hz, includes 41U graphite storage cabinet, M3220 controller assembly with dual HSV110 controllers, twelve M5214 dual-redundant FC loop 14-bay drive enclosures, four 12-port FC loop switches; requires DS-KGPSA-xx (283199-B22)	DS-SV110-KB
	Enterprise Virtual Array Model, eva5000 8C8D 60-Hz, includes 41U graphite storage cabinet, four M3220 controller assembly with eight HSV110 controllers, eight M5214 dual FC loop 14-bay drive enclosures; requires DS-KGPSA-xx (283263-B21)	DS-SV110-LA
	Enterprise Virtual Array Model, eva5000 8C8D 50-Hz, includes 41U graphite storage cabinet, four M3220 controller assembly, with eight HSV110 controllers, eight M5214 dual FC loop 14-bay drive enclosures; requires DS-KGPSA-xx (283263-B22)	DS-SV110-LB
	Enterprise Virtual Array Model, eva5000 0C6D-B 60-Hz, includes 41U graphite storage cabinet, six M5214 dual-redundant FC loop 14-bay drive enclosures, twelve 16.4-feet/5-meter interconnect cables (to 2C12D-B); requires DS-KGPSA-xx (283264-B21)	DS-SV110-MA
	Enterprise Virtual Array Model, eva5000 0C6D-B 50-Hz, includes 41U graphite storage cabinet, sixM5214 dual-redundant FC loop 14-bay drive enclosures, twelve 16.4-feet/5-meter interconnect cables (to 2C12D-B); requires DS-KGPSA-xx (283264-B22)	DS-SV110-MB
	Enterprise Virtual Array Model, eva5000 0C12D-B 60-Hz, includes 41U graphite storage cabinet, twelve M5214 dual-redundant FC loop 14-bay drive enclosures, twenty-four 16.4-feet/5-meter interconnect cables (to two 2C12D-B's); requires DS-KGPSA-xx (283265-B21)	DS-SV110-NA
	Enterprise Virtual Array Model, eva5000 0C12D-B 50-Hz, includes 41U graphite storage cabinet, twelve M5214 dual-redundant FC loop 14-bay drive enclosures, twenty-four 16.4-feet/5-meter interconnect cables (to two 2C12D-B's); requires DS-KGPSA-xx (283265-B22)	DS-SV110-NB
SAN Solutions Kits for eva5000	eva5000 Tru64 UNIX SAN Solutions Kit for Enterprise Virtual Array V3.0, minimum operating system supported is V5.1 (333683-B21)	QB-720AB-SA
	eva5000 OpenVMS SAN Solutions Kit for Enterprise Virtual Array V3.0, minimum operating system supported is V7.2-2 (333684-B21)	QB-720AC-SA
Enterprise Virtual Array 3000 (eva3000) Models	Enterprise Virtual Array, eva3000 60-Hz, one 3U Controller assembly with two HSV100 controllers, two M5114 3U Dual-redundant FC loop 14 bay disk enclosures, 42U Graphite Storage Cabinet (321618-B21)	DS-SWR20-AA
	Enterprise Virtual Array, eva3000 50-Hz, one 3U Controller assembly with two HSV100 controllers, two M5114 3U Dual-redundant FC loop 14 bay disk enclosures, 42U Graphite Storage Cabinet (321619-B21)	DS-SWR20-AB

Options

SAN Solutions Kits for eva 3000	eva3000 Tru64 UNIX SAN Solutions Kit for Enterprise Virtual Array V2.0 (250193-B22) NOTE: V5.1 requires Patch Kit 3: T64V51B19AS0005-20020411.tar V5.1A requires Patch Kit 3: T64V51AB03AS0003-20020827.tar	QB-6RPAB-SB
	eva3000 OpenVMS SAN Solutions Kit for Enterprise Virtual Array V2.0 (250194-B22) NOTE: V7.2-2 requires Tima Kit: DEC-AXPVMS-VMS722_FIBRE_SCSI-V0200 V7.3 requires Tima Kit: DEC-AXPVMS-VMS73_FIBRE_scsi-V0300	QB-6RPAC-SB
SAN Storage Array	MSA1000 Storage Works modular SAN array, Tru64 UNIX only (201723-B22)	3R-A4328-AA
StorageWorks Fibre Channel Switches	NOTE: For more information on the following switches, refer to http://www.compaq.com/products/quickspecs/10457_na/10457_na.HTML	
	Fibre Channel SAN switch, 8 ports, 2 Gb, EL with Fabric Operating Software (322120-B21)	DS-DSGGD-BC
	Fibre Channel SAN switch, 8 ports, 2 Gb, Power Pack, with Fabric Operating Software (322121-B21)	DS-DSGGD-CC
	Fibre Channel SAN Switch, 16 ports, 2 Gb, Base with Fabric Operating Software (322118-B21)	DS-DSGGD-CA
	Fibre Channel SAN switch,16 ports, 2 Gb, Power Pack, with Fabric Operating Software (322119-B21)	DS-DSGGD-CB
	Fibre Channel SAN Switch, 32 ports, 2 Gb, Base with Fabric Operating Software (240603-B21)	DS-DSGGD-AB
	Fibre Channel SAN Switch, 32 ports, 2 Gb, Power Pack with Fabric Operating Software (333764-B21)	DS-DSGGD-DB
	Fibre Channel SAN Switch, 64 ports, 2 Gb, Base with Fabric Operating Software (332177-B21)	DS-DSGGE-BA
	Fibre Channel SAN Switch, 64 ports, 2 Gb, Power Pack with Fabric Operating Software (332178-B21)	DS-DSGGE-CA
	Unmanaged Fibre Channel 7-port Storage Hub, North America (Tru64 UNIX only) (234453-001)	DS-SWXHB-07
	Fibre Channel 7-port Storage Hub, International (Tru64 UNIX only) (234453-B31)	DS-SWXHB-17
	Fibre Channel 7-port Storage Hub, Japan (Tru64 UNIX only) (234453-291)	DS-SWXHB-J7
	Long wave GBIC (127508-B21)	DS-DSGGA-MA
	Short wave optical GBIC (380561-B21)	DS-DXGGA-SA
	2 x 4 LVD Fiber Channel to SCSI Network Storage Router (262653-B21)	3R-A3740-AA
McData 64-port Fibre Channel SAN Director Class Switch	SAN Director 2 Gb, 64 ports	DS-DMGGD-BA
	SAN Edge Switch 2 Gb, 32 ports	DS-DMGGE-BC
	SAN Edge Switch 2 Gb, 16-ports	DS-DMGGE-BB
	NOTE: Connection for, or between, 1-Gb and/or 2-Gb SAN switches requires different cables. Refer to the Switches, Hubs, and Interconnects QuickSpecs at: http://www.compaq.com/products/quickspecs/North_America/10490.html	
Fibre Channel Disk Drives	36-GB 10K rpm dual-port 2-Gb/sec FC-AL 1-inch (25.4mm) drive (238590-B21)	3R-A3239-AA
	72-GB 10K rpm dual-port 2-Gb/sec FC-AL 1-inch (25.4mm) drive (238921-B21)	3R-A3260-AA
	146-GB 10K rpm dual-port 2-Gb/sec FC-AL 1-inch (25.4mm) drive (293556-B21)	3R-A3975-AA
	36-GB 15K rpm dual-port 2-Gb/sec FC-AL 1-inch (25.4mm) drive (236205B21)	3R-A3210-AA
	72-GB 15K rpm dual-port 2-Gb/sec FC-AL 1-inch (25.4mm) drive (293568-B21)	3R-A3971-AA

Options

StorageWorks Universal Drive Shelves – Model 4314R (Ultra3)	StorageWorks Model 4314R Ultra3 SCSI (LVD) single bus, Universal drive rackmount shelf, North America and International, except Japan (190209-001)	DS-SL13R-AA
	Same as above, Japan (190209-291)	DS-SL13R-AJ
StorageWorks Universal Drive Shelves – Model 4354R (Ultra3)	StorageWorks Model 4354R Ultra3 SCSI (LVD), dual bus, Universal drive rackmount shelf, North America and International, except Japan (190211-001)	DS-SL13R-BA
	Same as above, Japan (190211-291)	DS-SL13R-BJ
StorageWorks Universal Drive Shelves – Model 4314T (Ultra3)	StorageWorks Model 4314T, Ultra3, Universal Drive Shelves Single Bus, Tower, U.S. (190210-001)	DS-SL13T-AA
	StorageWorks Model 4314T, Ultra3, Universal Drive Shelves Single Bus, Tower, International (190210-B31)	DS-SL13T-AB
	StorageWorks Model 4314T, Ultra3, Universal Drive Shelves Single Bus, Tower, Japan (190210-291)	DS-SL13T-AJ
StorageWorks Universal Drive Shelves – Model 4200 to Model 4300 Upgrade I/O Modules	StorageWorks Model 4300 Ultra 160 single-port LVD I/O Module (190212-B21)	DS-SE3ZJ-DA
	StorageWorks Model 4300 Ultra 160 dual-port LVD I/O Module (190213-B21)	DS-SE3ZJ-SA
System Disk Drives (Supported in Model 4314R, 4314T, or 4354R Universal Drive Shelves)	18.2-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3848-AA
	36.4-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3838-AA
	36.4-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3849-AA
	72.8-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3839-AA
	72.8-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3851-AA
	146-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3841-AA
Enterprise Virtual Array Model 8C8D	Enterprise Virtual Array Model 8C8D 60-Hz, includes 42U opal storage cabinet, four M3220 controller assembly with eight HSV110 controllers, eight M5214 dual FC loop 14-bay drive enclosures	239782-001
	Enterprise Virtual Array Model 8C8D 50-Hz, includes 42U opal storage cabinet, four M3220 controller assembly with eight HSV110 controllers, eight M5214 dual FC loop 14-bay drive enclosures	249977-B21

Step 7 - UltraSCSI RAID Array Controllers - Optional

StorageWorks Disk Array Family	NOTE: The HP StorageWorks Disk Array Family, specifically the XP128 and XP1024, are now supported on AlphaServer DS10 systems. For product and ordering information, refer to the following Web pages: http://www.hp.com/products1/storage/products/disk_arrays/highend/xp1024/index.html http://www.hp.com/products1/storage/products/disk_arrays/highend/xp128/index.html The following part numbers have been assigned for reference purposes only:

3R-A4417-AA	A7876A	XP128 Disk Array Control Frame
3R-A4418-AA	A7906A	XP1024 Disk Array Control Frame

Step 8 - Networks and Communications - Optional

- Reference individual product information for operating system support.
- Systems include dual embedded 10/100 BaseT Ethernet ports (BN25G-xx cable must be ordered separately)
- Additional Ethernet ports can be added using available PCI slots

	Maximum # Supported			
	Tru64 UNIX	OpenVMS	Linux	
Ethernet 10/100/1000				
Single-port 100Mbps (MMF/duplex-SC) add-on daughter card for use with 3X-DE602-BB. The combined 3X-DE602-BB 3X-DE602-FA provides two 10/100 (UTP/RJ45s) and one 100Mbps (MMF/SC) ports in a single PCI slot option. Maximum two per system, maximum ten 10/100 Ethernet ports supported per system. Use BN34A or BN34B cables. NOTE: • The 3X-DE602-FA cannot be used standalone. • Two 10/100 Ethernet ports included with DS10 system.	2	1	-	3X-DE602-FA
PCI (32-/64-bit, 33-/66-MHz) dual-port 10/100 Ethernet (UTP/RJ45s) NIC and Base Module. (One 3X-DE602-TA or 3X-DE602-FA optional add-on daughter card can be combined with this module.) Maximum two per system, maximum ten 10/100 Ethernet ports per system. Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables. NOTE: Two 10/100 Ethernet ports included with DS10 system.	2	2	-	3X-DE602-BB
Dual-port 10/100 Ethernet (UTP/RJ45) add-on daughter card for use with the 3X-DE602-BB only. The combined 3X-DE602-BB and 3X-DE602-TA modules provide four 10/100 (UTP/RJ45s) ports in a single PCI slot option; allows for a maximum of 16 ports per system. Maximum two per system, maximum ten 10/100 Ethernet ports per system. Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables. NOTES: • The 3X-DE602-TA cannot be used standalone. • OpenVMS V7.3 requires Tima Kit: DEC-AXPVMS-VMS73_LAN-V0100-4.PCSI • OpenVMS V7.2-2H1 requires OpenVMS Tima Kit located at: http://ftp.support.compaq.com/patches/.new/openvms.shtml • Two 10/100 Ethernet ports included with DS10 system.	2	2	-	3X-DE602-TA

Options

Cable for 10BaseT twisted pair connection				BN25G-xx
PCI (32-/64-bit, 33-/66-MHz) single-port 1000 Mbps (MMF/SC) NIC; no on-board boot-ROM support. Use BN34A or BN34B cables.	1	1	1	DEGPA-SA
PCI single-port 1000 Mbps (MMF with duplex-SC) Gigabit Ethernet; OpenVMS V7.3-1 plus TIMA kit located at DEC-AXPVMS-VMS731_LAN-V0400—4.PCSI; does not support cluster interconnect NOTE: Use BN34A, BN34B, or equivalent cables with SC connectors.	-	2	-	3X-DEGXA-SA
PCI single-port 10/100/1000Mbps (Twisted-Pair Copper with RJ45) Gigabit Ethernet. Use BN25G, BN26M, BN24Q, BN28Q twisted pair RJ45 cables. NOTES: • OpenVMS V7.3-1 plus TIMA kit located at DEC-AXPVMS-VMS731_LAN-V0400-4.PCSI • Does not support cluster interconnect	-	2	-	3X-DEGXA-TA
Multi-function Ethernet 10/100				
PCI combo adapter, Permedia P2 graphics, 10/100 NIC, 1-port SCSI	1	1	-	3X-DEPVZ-AA
3X-DEPVZ-AA specific-use 3-meter LVD2 SCSI cable				BN37A-03
PCI-to-Gigabit Ethernet adapter – UTP, with RJ45 (no boot support)	1	1	1	DEGPA-TA

FDDI				
PCI FDDI adapter, single attachment station (SAS), multi-mode fiber (MMF), SC connector	1	1	-	3X-DEFPA-AC
PCI (32-bit, 33-MHz) to FDDI DAS (MMF/duplex-SC) NIC. Use BN34A, BN34B, or BN34D cables.	1	1	-	3X-DEFPA-DC
FDDI-specific cable - Multimode fiber optic (MMF) 62.5/125um duplex cable with SC-to-MIC connectors. -xx = available lengths: (01, 03, 10) for 1, 3, 10 meters				BN34D-xx
SC-to-SC dual fiber optic cable mm, pp xx = length in meters				BN34B-xx
PCI (32-bit, 33-MHz) to FDDI SAS (UTP/RJ45) NIC. Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	1	1	-	3X-DEFPA-UC
PCI (32-bit, 33-MHz) to FDDI DAS (UTP/RJ45s) NIC. Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	1	1	-	3X-DEFPA-MC

Options

ATM				
PCI (32-bit, 33-MHz) to 155 Mbps ATM, copper NIC with RJ45 connector. Use BN25G-xx, or BN26M-xx cables.	2 (V4.0F)	2 (V7.2-1)	-	3X-DAPBA-UA
PCI (32-bit, 33-MHz) to 155 Mbps ATM fiber NIC with SC connector. Use BN34B-xx cable.	2 (V4.0F)	2 (V7.2-1)	-	3X-DAPBA-FA
Asynchronous Communications (ASYNC)				
PCI (32-bit, 33-MHz) to quad-port Async Communications NIC with DB-25 octopus cable				PBXDA-BA
PCI (32-bit, 33-MHz) to 8-port Async Communications NIC with DB-25 octopus cables				PBXDA-BB
PCI 16-port asynchronous controller, cable included; maximum three PBXDA-Ax per system	3 (V4.0F)	3	-	PBXDA-AC
PBXDA-AC Asynchronous Connector Adapters				
RJ45 to DB-25 converter cable				CXI01-AC
RJ45 to DEC MJ11 converter cable (8 pack)				CXI01-AF
Synchronous Communications (SYNC)				
PCI (32-bit, 33-MHz) to dual-port intelligent synchronous communications NIC. Requires at least one (maximum two) BN34x synchronous cable listed below.	2	2	-	3X-PBXDD-AA
PCI (32-bit, 33-MHz) to quad-port intelligent synchronous communications NIC. Requires at least one (maximum four) BN34x synchronous cable listed below.	2	2	-	3X-PBXDD-AB
Synchronous-Specific Cables				
EIA-530 single-port cable				3X-BC34G-06
V.24/EIA-232 single-port cable				3X-BC34L-06
V.11/x.21 single-port cable				3X-BC33S-06
V.35 single-port cable				3X-BC34T-06

Options

Ethernet, FDDI, ATM Multi-use Cables				
Multimode fiber optic (MMF) 62.5/125um duplex cable, with SC-to-ST connectors. –xx = available lengths: (2E, 4E, 01, 03, 10, 20, 30) for 2.4, 4.5, 1, 3, 10, 20, 30 meters				BN34A-xx
Multimode fiber optic (MMF) 62.5/125um duplex cable, with SC-to-SC connectors. -xx = available lengths: (2E, 4E, 01, 03, 10, 20, 30) for 2.4, 4.5, 1, 3, 10, 20, 30 meters				BN34B-xx
Category 5e (4-Unshielded Twisted Pairs / UTP) straight-through cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0B, 0E, 01, 03, 04, 07) for 0.2, 0.5, 1, 3, 4, 7 meters				BN25G-xx
Category 5e (4-Twisted Pairs, Screened/ ScTP) straight-through cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0E, 01, 03, 04, 07) for 0.5, 1, 3, 4, 7 meters				BN26M-xx
Category 5e (4-Unshielded Twisted Pairs / UTP) Xover cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0E, 01, 03, 04, 07) for 0.5, 1, 3, 4, 7 meters				BN24Q-xx
Category 5e (4-Twisted Pairs, Screened / ScTP) Xover cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0E, 01, 03, 04, 07) for 0.5, 1, 3, 4, 7 meters				BN28Q-xx

Step 9 - Graphics Adapters - Optional

- RAID Configuration Utility is accessible via console port for Tru64 UNIX and OpenVMS systems; optional graphics capability available
- Select graphics adapter, monitor, and country-specific keyboard if required
- Open3D license ships with PowerStorm 300/350 graphics accelerators - Open3D drivers and libraries ship with either the operating system or graphics accelerator.

	Maximum # Supported			
	Tru64 UNIX	OpenVMS	Linux	
ATI Radeon 7500 64-MB PC I 2D/3D Graphics Accelerator NOTE: Only Radeon 7500 PCI cards can be used in a multi-card environment	4 (2D only) 1 - 3D 1 - Dual head (cloned video using DVI port - 2D only) V5.1B	1 2D/3D 0 - Dual head V7.3-1 with TIMA kit: DEC-AXPVMS-VMS731_GRAPHICS-V0200–4.PCSI	-	3X-PBXGG-AA
Tru64 UNIX Open 3D license for Radeon 7500 (required for 3D functionality)				QL-6ZRA9-AA
OpenVMS Open3D license for Radeon 7500 (required for 3D functionality)				QL-0ADA9-AA
Additional Tru64 UNIX media kit for Radeon 7500 (initial kit ships with Radeon 7500 card)				QA-6ZRAA-H8
Additional OpenVMS media kit for Radeon 7500 (initial kit ships with Radeon 7500 card)				QA-6ZPAA-H8
PowerStorm 300 3D multi-head graphics accelerator with 15-MB frame buffer memory and 16-MB texture memory	3	3	-	SN-PBXGD-AD
PowerStorm 350 3D multi-head graphics accelerator with 30-MB frame buffer memory and 32-MB texture memory	3	3	-	SN-PBXGD-AE
PCI combo adapter, Permedia P2 graphics, 10/100 NIC, 1-port SCSI	1	1	-	3X-DEPVZ-AA

Step 10 - Monitors - Optional

- Graphics monitors other than those listed below can be used if compatible with SVGA graphics ordered with system
- A video cable, 6-foot/1.8-meter length, is included with all variants of monitors
- Video extension cable required if monitor is located more than 1.5-meter from system
- Monitors ship with, but are not integrated with the system

Options

Carbon/Silver Monitors	V7550 17-inch (16-inch viewable image size) flat-faced shadow mask color monitor, two-tone (carbon/silver), 0.25mm dot pitch, VGA to 1024 x 768 @85 Hz, MPRII/TCO99/Energy Star compliant, Northern Hemisphere with NA power cord, VGA cable	3R-A4002-AA
	Same as above, with Euro power cord	3R-A4201-AA
	Same as above, APD, no power cord	3R-A4202-AA
	Same as above, with PRC power cord, CCIB	3R-A4446-AA
	Same as above, Southern Hemisphere, with Australia/New Zealand power cord	3R-A4203-AA
	S7500 17-inch (16-inch viewable image size) FST multi-frequency color monitor, 2-tone (carbon/silver), 0.24-mm dot pitch, VGA to 1024 x 768 @85 Hz, MPRII/TCO 99/Energy Star Compliant, Northern Hemisphere with PRC power cord CCIB, VGA cable	3R-4800-AA
	S9500 17-inch (16-inch viewable image size) FST multi-frequency color monitor, 2-tone (carbon/silver), 0.24-mm dot pitch, VGA to 1280 x 1024 @85 Hz, MPRII/TCO 99/Energy Star Compliant, Northern Hemisphere with PRC power cord CCIB, VGA cable	3R-A4801-AA
	P930 19-inch (18-inch viewable image size) auto-scanning color monitor, Diamondtron NF, 0.24-mm aperture grille pitch, VGA to 1600 x 1200 @85 Hz, MPRII/TCO 99/Energy Star Compliant, Northern Hemisphere with NA power cord, VGA cable	3R-A4215-AA
	Same as above, with Euro power cord	3R-A4391-AA
	Same as above, Taiwan, with NA power cord	3R-A4392-AA
	Same as above, with PRC power cord, CCIB	3R-A4394-AA
	Same as above, Southern Hemisphere, 0.25 to 0.27 mm aperture grille pitch, with Australia/New Zealand power cord	3R-A4393-AA
	P1130 21-inch (19.8-inch viewable image size) FD Trinitron auto-scanning color monitor, 0.24-mm aperture grille pitch, VGA to 1792 x 1344 @85Hz, dual video input, USB Hub, MPRII/TCO 99/Energy Star Compliant, Northern Hemisphere with NA power cord, VGA cable	3R-A4216-AA
	Same as above, with Euro power cord	3R-A4396-AA
	Same as above, Taiwan, no power cord	3R-A4397-AA
	Same as above, with PRC power cord, CCIB	3R-A4400-AA
	Same as above, Southern Hemisphere, with Australia/New Zealand power cord	3R-A4398-AA
Carbon/Silver Flat Panel Monitors	TFT1825, 18-inch (18-inchviewable image size) TFT flat panel monitor, 0.28mm pixel pitch, 1600 x 1200 @60Hz, multi-mode support, MPRII/TCO99/Energy Star compliant, one VGA, one DVI-I input connector. NA power cord, VGA and DVI-I cables	3R-A4292-AA
	TFT1520, 15-inch (15-inch viewable image size) TFT flat panel monitor, 0.297 mm pixel pitch, 1024 x 768 @75 Hz, multi-mode support, MPRII/TCO99/Energy Star compliant, two video input connectors (one VGA and one DVI-I), NA power cord, VGA and DVI-I cables	3R-A4249-AA
Video Extension Cable	6-foot/1.8-meter video extension cable	BN39C-02

Options

Monitor Power Cords	North America	BN26J-1K
	Australia, New Zealand, 2.5-meter (103541-011)	BN19H-2E
	Central Europe, 2.5-meter	BN19C-2E
	Denmark, 2.5-meter (103541-481)	BN19K-2E
	Egypt, India, South Africa, 2.5-meter (103541-AR1)	BN19S-2E
	Israel, 2.5-meter	BN18L-2E
	Italy, 2.5-meter (103541-461)	BN35M-02
	Japan, 2.5-meter, Dentori approved	3X-BN46F-02
	Switzerland, 2.5-meter (103541-511)	BN19E-2E
	UK, Ireland, 2.5-meter	BN19A-2E

Step 11 - Keyboards, Mouse

- Keyboards are not included with the system and must be ordered separately
- Selection of country-specific keyboard is recommended
- Select an opal OpenVMS keyboard for use with VT5xx text terminals.

Options

	Opal	Carbon	
Keyboard/Language	OpenVMS	Tru64 UNIX	OpenVMS
U.S. keyboard	LK461-A2	3R-A4362-AA	3X-LK462-A2
Arabic keyboard	-	3R-LKQ48-BR	-
Belgian keyboard	LK461-AB	3R-LKQ48-AB	3X-LK462-AB
BHCSY keyboard	-	3R-LKQ48-AX	-
Canadian/English keyboard	LK461-AQ	-	3X-LK462-AQ
Canadian/French keyboard	LK461-AC	3R-LKQ48-AC	3X-LK462-AC
Cyrillic keyboard (Russian)	LK461-BT	3R-LKQ48-BT	3X-LK462-BT
Czech keyboard	LK461-BV	3R-LKQ48-BV	3X-LK462-BV
Danish keyboard	LK461-AD	3R-LKQ48-AD	3X-LK462-AD
Dutch keyboard	LK461-AH	3R-LKQ48-AH	3X-LK462-AH
Finnish keyboard	LK461-AF	3R-LKQ48-AF	3X-LK462-AF
French keyboard	LK461-AP	3R-LKQ48-AP	3X-LK462-AP
German keyboard	LK461-AG	3R-LKQ48-AG	3X-LK462-AG
Greek keyboard	LK461-BH	3R-LKQ48-BH	3X-LK462-BH
Hebrew keyboard	LK461-AT	3R-LKQ48-AT	3X-LK462-AT
Hungarian keyboard	LK461-BQ	3R-LKQ48-BQ	3X-LK462-BQ
International keyboard	-	3R-A4362-AA	-
Italian keyboard	LK461-AI	3R-A4363-AA	3X-LK462-AI
Japanese keyboard	-	3R-LKQ48-AJ	-
Korean keyboard	-	3R-LKQ48-BK	-
Latin-American keyboard	-	3R-LKQ48-AR	-
Norwegian keyboard	LK461-AN	3R-LKQ48-AN	3X-LK462-AN
Polish keyboard	LK461-BP	3R-LKQ48-BP	3X-LK462-BP
Portuguese keyboard	LK461-AV	3R-LKQ48-AV	3X-LK462-AV
Romanian keyboard	LK461-BL	-	3X-LK462-BL
Simplified Chinese keyboard	-	3R-LKQ48-CV	-
Slovak keyboard	LK461-CZ	3R-LKQ48-CZ	3X-LK462-CZ
Spanish keyboard	LK461-AS	3R-LKQ48-AS	3X-LK462-AS
Swedish keyboard	LK461-AM	3R-LKQ48-AM	3X-LK462-AM
Swiss/French keyboard	LK461-AK	3R-A4374-AA	3X-LK462-AK
Swiss/German keyboard	LK461-AL	-	3X-LK462-AL
Traditional Chinese keyboard	-	3R-LKQ48-BI	-
Thai keyboard	-	3R-LKQ48-CB	-
Turkish Q keyboard	LK461-BU	3R-LKQ48-BU	3X-LK462-BU
Turkish/F keyboard	LK461-BW	-	3X-LK462-BW
UK keyboard	-	3R-A4378-AA	-
Yugoslavian keyboard	LK461-BY	-	3X-LK462-BY

Mouse - Recommended	3-button mouse – carbon	3R-A3480-AA

Step 12 - Console Terminal - Optional

- Any terminal can be used as a console device
- Third-party console devices require an EIA-232 25-pin DSUB connector

VT510 video terminal; requires H8575-x cable, either male or female	VT510-xx
Console cable, female connector	H8575-A
Console cable, male connector	H8575-D
Console cable, male connector (IBM compatible)	H8575-E

Step 13 - MEMORY CHANNEL - Optional

Tru64 UNIX Systems

- Requires Tru64 UNIX V5.0A or later and either TruCluster Server license (QL-6BRAC-AA) or TruCluster Plus Software Package (QP-6R9AC-AA)

OpenVMS Systems

- Requires OpenVMS V7.1-2 or later and OpenVMS Cluster license (QL-MUZAC-AA)

Configuring Information

- Up to two PCI-to-System Area Network adapters (CCMAB-AA) are supported in a single system.
- Two-node clusters can be configured by ordering a CCMAB-AA for each node and one BN39B-04 or BN39B-10 cable; cable connects directly to CCMAB-AA in each node.
- For a two-node cluster that will not need to be rebooted when adding additional members, order one CCMAB-AA adapter and one BN39B-04 or BN39B-10 cable for each node, and one CCMHB-AA hub for the cluster.
- For three- or four- node clusters, order one CCMAB-AA adapter and one BN39B-04 or BN39B-10 cable for each node, and one CCMHB-AA hub for the cluster
- CCMHB-AA includes four CCMLB-AA line cards and supports up to four nodes; expansion up to eight system nodes can be achieved by adding up to four CCMLB-AA line cards.
- If two CCMAB-AAs are configured in each system, a second CCMHB-AA is required.
- If nodes must be separated by a distance longer than standard copper cables allow the CCMFB option converts the output of the standard CCMAB controller or CCMLB line card to single-mode fiber optic cable. The fiber optic connection may be up to 2,000 meters long between two CCMAB controllers connected in virtual hub mode, or 3,000 meters between a CCMAB controller and a CCMHB hub. (The connection from the CCMHB hub to a second system may also be 3,000 meters.) The CCMFB option requires a second PCI slot in the system from which it draws power only. It is normally connected to the corresponding CCMAB controller with the short BN39B-01 cable. The CCMFB is also used in the CCMHB hub where it occupies a slot normally used by the CCMLB line card, limiting expansion to four radial fiber optic connections.
- CCMHB-BA hub expansion box provides additional slots for up to eight fiber optic connections. Two standard length single-mode fiber optic cables are available (BN34R-10 and BN34R-31); however, users normally provide this fiber optic connection. Fiber optic connectivity is completely transparent to the systems using it and has no performance impact.
- For integration of MEMORY CHANNEL hubs into cabinet configurations, a rackmount kit (2T-MAVRK-AA) and power cord (BN35S-02) are required

Options

MEMORY CHANNEL Controller	PCI System Area Network Controller, maximum two	CCMAB-AA
	System Area Network Hub with four line cards; includes BN19P-2E power cord for Canada, Japan, and U.S. operations- for other regions, order appropriate power cord from list below	CCMHB-AA
	Hub expansion box with no line cards	CCMHB-BA
	Expansion line card for CCMHB hub	CCMLB-AA
	1-meter cable for CCMAB and CCMHB	BN39B-01
	4-meter cable for CCMAB and CCMHB	BN39B-04
	10-meter cable for CCMAB and CCMHB	BN39B-10
	Copper-to-single mode fiber optic converter - 5V (clock not affected)	CCMFB-AA
	Rackmount kit for CCMHB hub	2T-MAVRK-AA
	Power cord for rackmount CCMHB hub	BN35S-02

MEMORY CHANNEL Power Cords	Australia, New Zealand (103541-011)	BN19H-2E
	Central Europe	BN19C-2E
	Denmark (103541-481)	BN19K-2E
	Egypt, India (103541-AR1)	BN19S-2E
	Ireland, United Kingdom	BN19A-2E
	Israel	BN18L-2E
	Italy (103541-461)	BN35M-02
	Switzerland (103541-511)	BN19E-2E

Step 14 - Floor Stand

Floor Stand	Floor Stand for AlphaServer/AlphaStation DS10	3X-BA73P-AA

Step 15 - Software - Required selection of media and documentation for first system on site

Tru64 UNIX

- Software processor code = E
- AlphaServer DS10Tru64 UNIX systems include Base license, Unlimited User license, Server Extension license, Internet Express, and Secure Web Server
- AlphaStation DS10 Tru64 UNIX systems include 2-user Base license

Options

When using Tru64 UNIX V5.0A or later	Tru64 UNIX media and online documentation on CD-ROM	QA-6ADAA-H8
	Tru64 UNIX full hard copy documentation	QA-6ADAA-GZ
	TruCluster Plus Software Package with licenses for TruCluster Server, Logical Storage Manager, and AdvFS Utilities	QP-6R9AC-AA
	TruCluster Server License	QL-6BRAC-AA
	AdvFS Utilities License	QL-0EGAE-AA
	Logical Storage Manager License	QL-2GVAE-AA
	Advanced Server for Tru64 UNIX, 25 client concurrent use license	QL-5U29M-3D
	Advanced Server for Tru64 UNIX, 50 client concurrent use license	QL-5U29M-3E
	Advanced Server for Tru64 UNIX, 100 client concurrent use license	QL-5U29M-3F
	Advanced Server for Tru64 UNIX, 250 client concurrent use license	QL-5U29M-3G
	Advanced Server for Tru64 UNIX, 500 client concurrent use license	QL-5U29M-3H
	Layered products media and documentation for Tru64 UNIX on CD-ROM	QA-054AA-H8
	DECnet/OSI end-system license for Tru64 UNIX	QL-MTJAE-AA
	DECnet/OSI extended function license for Tru64 UNIX	QL-MTKAE-AA

Options

OpenVMS

- AlphaServer DS10 OpenVMS systems include Base license with System Manager license and Enterprise Integration Server License Package for OpenVMS Revision V3.0A.
- AlphaStation DS10 OpenVMS systems include Base license, Concurrent Use 1-user license, and NAS 150 Client license.
- Enterprise Integration Package includes licenses for TCP/IP Services for OpenVMS, DECwindows Motif for OpenVMS Alpha, DECprint Supervisor for OpenVMS Alpha Plus, DECprint Supervisor for OpenVMS Open, DECnet-Plus for OpenVMS Alpha End System, Archive/Backup System for OpenVMS Management Tools, Archive/Backup Agent for Windows NT, OpenVMS Disk Services for Windows NT, Office Server for OpenVMS, PATHWORKS 32, PATHWORKS V6 for OpenVMS – Advanced Server, and DIGITAL Office Server Client Access License

OpenVMS V7.1-2 media and online documentation on CD-ROM	QA-MT1AR-H8
OpenVMS V7.2-1 media and online documentation on CD-ROM	QA-MT1AT-H8
OpenVMS media and online documentation on CD-ROM	QA-MT1AA-H8
OpenVMS hard copy documentation	QA-001AA-GZ
Layered products media and documentation for OpenVMS on CD-ROM	QA-03XAA-H8

- OpenVMS Concurrent Use licenses provide the right to interactively use the operating system by the specified number of concurrent users on a designated OpenVMS system. OpenVMS Concurrent Use licenses can be moved from one system to another at user discretion and can be shared in a mixed OpenVMS VAX and OpenVMS Alpha cluster.
- OpenVMS Traditional Unlimited Use license is system specific and can only be used on one single system at a time. It cannot be shared between systems or in an OpenVMS VAX or OpenVMS Alpha Cluster.

Concurrent Use 1-user license	QL-MT3AA-3B
Concurrent Use 2-user license	QL-MT3AA-3C
Concurrent Use 4-user license	QL-MT3AA-3D
Concurrent Use 8-user license	QL-MT3AA-3E
Concurrent Use 16-user license	QL-MT3AA-3F
Concurrent Use 32-user license	QL-MT3AA-3G
Concurrent Use 64-user license	QL-MT3AA-3H
Concurrent Use 128-user license	QL-MT3AA-3J
Concurrent Use 256-user license	QL-MT3AA-3K
Traditional Unlimited User license	QL-MT2AE-AA
OpenVMS Cluster license for Alpha systems	QL-MUZAC-AA
OpenVMS Cluster Client license for Alpha systems	QL-3MRAC-AA
OpenVMS Cluster Client-to-Full OpenVMS Cluster Migration license	QL-6J7AC-AA

Linux Kit - Optional

Linux Red Hat CD-ROM Kit	QA-6M1AA-H8

Step 16 - Hardware and Software Support Services

Hardware and Software Support Services

- Select one of the optional HP Care Pack Service Packages described below that best supports the customer's operational requirements for system availability.

Options

HP Care Pack Services

- HP Care Pack Services are available for AlphaServer/AlphaStation systems running Tru64 UNIX or OpenVMS operating systems. HP Care Pack Services are designed for customers who require support beyond that provided by the hardware warranty with coverage for both Principal servers/stations and SSPs (Subsequent System Packages) - that meet a full range of customer support requirements.

Program Features – Principal Server/Station

HP Support Plus

- 13 x 5 HW/SW support
- 4-hour response on-site hardware support
- 2-hour response for software support
- License Subscription for HP O/S software and embedded L/P (i.e., EIS for OpenVMS, unlimited users, and server extensions for Tru64 UNIX)
- Consolidated Software Media Update Distribution for OpenVMS or Tru64 UNIX and their layered products. (Layered products not included on Consolidated Media Update Distribution can be ordered separately.)

HP Support Plus 24

- 24 x 7 HW/SW support
- Named HW engineer
- 4-hour response on-site hardware support
- 2-hour response for software support
- License Subscription for HP O/S software and embedded L/P (i.e., EIS for OpenVMS, unlimited users, and server extensions for Tru64 UNIX)
- Consolidated Software Media Update Distribution for OpenVMS or Tru64 UNIX and their layered products. (Layered products not included on Consolidated Media Update Distribution can be ordered separately.)

Program Features – Additional Services

SSPs (Subsequent System Packages)

- For HP Care Pack Support Plus and Support Plus 24
- HW Support at same level as corresponding package for Principal server/station
- License Subscription: HP O/S (where applicable)
- Telephone support through Principal server/station covered by full support package

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Installation

- Pre-installation review
- Unpacking of equipment
- Assemble and test
- Basic product usage info
- No software installation added

Installation & Startup HP O/S

- Pre-installation review
- Unpacking of equipment
- Assemble and test
- Basic product usage info
- Install operating systems
- Product configuration
- Print and network access
- Orientation

Options

Model/HP Care Pack Services	Principal Server/ Station 1 year	Principal Server/ Station 3 years	Subsequent Systems 1 year	Subsequent Systems 3 years
AlphaServer/AlphaStation DS10				
HP Support Plus	FP-A01BA-12	FP-A01BA-36	FP-A21BA-12	FP-A21BA-36
HP Support Plus 24	FP-A02BA-12	FP-A02BA-36	FP-A22BA-12	FP-A22BA-36
Installation	FP-AINST-BA	FP-AINST-BA	FP-AINST-BA	FP-AINST-BA
Installation & Startup	FP-ASTAR-BA	FP-ASTAR-BA	FP-ASTAR-BA	FP-ASTAR-BA

NOTES:

- AlphaServer/AlphaStation DS10 systems include three years hardware warranty with 5x9, on-site Next Business Day response.
- HP Care Pack Services include support for new HP branded hardware options internal to the AlphaServer/AlphaStation enclosure plus a monitor (17-inch or less excluding flat panel models).
- External storage devices/cabinets carry their own level of warranty and should be quoted separately for uplifted warranty services.
- In addition to the HP Care Pack Services shown above, other service packages are available for separate hardware and software support. For more information on Hardware and Software Upfront Services and other HP service options available for AlphaServers and AlphaStations, consult your Sales Account Manager, HP Services Principal, or visit http://www.hp.com/hps/ NOTE: This website is available in English only.

TechSpecs

Physical Characteristics	Dimensions (H x W x D)	5.1 x 17.6 x 19 in (13 x 45 x 48 cm)
	Weight (maximum)	36 lb (16.3 kg)

Cabinets		H9A10 M-Series	H9A15 M-Series
	Dimensions (H x W x D)	67 x 23.6 x 36.1 in (170 x 60 x 91.6 cm)	79 x 23.6 x 36.1 in (200 x 60 x 91.6 cm)
	Shipping Dimensions	73 x 36 x 48 in (185.5 x 91.5 x 122 cm)	85 x 36 x 48 in (216 x 91.5 x 122 cm)
	Weight	Configuration dependent	1,000 lb/450 kg
	Shipping Weight	Configuration dependent, maximum payload 1,000 lb (453.6 kg)	1,056 lb (550 kg) (normal) 1,408 lb (640 kg) (maximum)

System Unit			
	Environmental		
	Temperature	Operating (Tower, Rackmount)	50° to 104° F (10° to 40° C)
		NOTE: Maximum operating temperature at sea level. Reduce by 1.8° F (1° C) for each 2,000 ft (660 m) above sea level.	
		Non-operating	–40° to 151° F (–40° to 66° C)
	Humidity	Operating	10% to 95%
		Non-operating	20% to 80%
	Heat Dissipation	Single unit = 176 Watts = 601 BTU/Hr	
		Rack of 12 systems = 2112 Watts = ~7,212 BTU/Hr	
	Typical System	AlphaServer DS10 600 MHz	
		Power Supply, 300W	
		Main logic board containing Alpha CPU, EV6, 600 MHz	
		Main memory = 1 GB	
		(3) Hard disk drive	
		(1) Floppy disk drive	
		(1) CD-ROM disk drive	
		(1) PCI Graphics Card	
		(1) PCI Graphics Card	
		Running system exerciser during the power measurement.	
		Measured Input Voltage = 116 VAC RMS @ 60Hz	
		Measured Input Current = 2.27 Amps RMS	
		Measured Input Power = 176 Watts	
	Altitude (unpressurized)	Operating	40,000 ft (12,192 m)
		Non-operating	10,000 ft (3,048 m)
		NOTE: Higher altitudes are possible if maximum operating temperature is reduced.	
	Electrical (Power supplies are universal, PFC, auto ranging, 100/240 VAC)		
	Nominal Voltage (VAC)	100 to 120 VAC/220 VAC	
	Operating Voltage Range (VAC) (temporary condition)	90 to 128 VAC/180 to 265 VAC	
	Power Source Phase	Single/Single/Single	
	Nominal Frequency (Hz)	60 Hz/50 Hz	
	Frequency Range (Hz)	59 to 61 Hz /49-51 Hz	

Maximum Inrush Current	11 amps/22 amps			
Power Supply (single cordset)	12 amps/5 amps			
Acoustics (Declared values per ISO 9296 and ISO 7779)				
AlphaServer DS10 with one HDD		*LWAdB*	*LpAm, dBA* (Operator position)	*LpAm, dBA* (Bystander Position)
	Idle	5.7	48	41
	Operating	6.0	52	45
Regulatory	Agency Approvals		UL: Listed to UL1950 (3rd edition)	
			CUL Listed: CAN/CSA-C22.2 No. 950-M95	
			TUV: EN 60950/A11: 1997 GS marked	
			FCC: Part 15 Class B	
			CE: EN55022, EN50082	
			VCCI Class II ITE	
			BMSI: CISPR22, CNS13438	
			C-Tick: CISPR22, AS/NZS 3548	
	Reviewed to		AS/NZ 3260:1993 Australian/New Zealand Standard	
			EN 60950/A11: 1997 European Norm	
			IEC950 (2nd edition, 4th amend)	

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